

Challenge	Code
Immature testing culture: Who tests the IoT system	CT1
Immature testing culture: How IoT testing is done	CT2
Relying on access to the real device	CT3
Reproducing IoT bugs	CT4
Combinatorial explosion	CT5
Testing and debugging edge-cases	CT6
Fault localization	CT7
Device and protocol fragmentation	CH1
Third-party breaking changes	CH2
Diversity of technologies, backgrounds, and requirements	CH3
Security: Security of third-parties	CS1
Limitation of devices for security	CS2
The complexity of security	CS3
Releasing updates	C01
Scalability issues	C02
Issues with IoT architecture, IoT system design issues	C03
Programming for constrained IoT devices, limitation of IoT devices	C04
Handling failures in IoT	C05
Development cultures	C06
Development tools and supports	C07
Performance and efficiency	C08